FOR ADMINISTRATIVE USE

CDC INFLUENZA SURVEILLANCE REPORT

NO. 28 DECEMBER 3, 1957

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SPECIAL NOTE

Information contained in this report is a summary of data reported to CDC b State Health Departments, Epidemic Intelligence Service Officers, collaborating influenza diagnostic laboratories, and other pertinent sources. Much of it is preliminary in nature and is intended for those involved in influenza control activities. Anyone desiring to quote this information is urged to contact the person or persons primarily responsible for the items reported in order that the exact interpretation of the report and the current status of the investigation be obtained. State Health Officers, of course, will judge the advisability of releasing any information from their own states.

Table of Contents

I. Summary of Information

Approximately 54% of the counties of the United States have now reported influenza occurrences since the first appearance of the Asian strain in this country. For the period November 20-December 2, 262 new county occurrences (outbreaks or confirmed Asian strain cases) were reported to CDC by 20 states, bringing the total number of counties involved to 1652. All states appear to be experiencing declining incidence and several have returned to normal respiratory disease rates for the season.

Influenza and pneumonia mortality for the United States as a whole has declined sharply again. For the week ending November 30, 556 deaths were reported. All divisions show declining mortality but only the Middle Atlantic and Mountain states have dropped below the "epidemic threshold."

Industrial absentee rates had returned to normal in 9 of the 36 reporting cities by November 23. Many other cities were close to normal rates at this time, and all rates were below peak levels.

A total of 51,653,589 ml. of Asian strain influenza vaccine has been released through November 27. This includes 2,775,965 ml. released since November 20, of which 121,500 ml. were 200 cca monovalent vaccine and the remainder 400 cca monovalent vaccine. Estimated vaccine production for December has been dropped from 11,175,000 ml. to 8,175,000 ml.

National Health Survey data showed declines in both the average number of persons in bed each day and in new cases involving one or more days of bed disability for the week ending November 9.

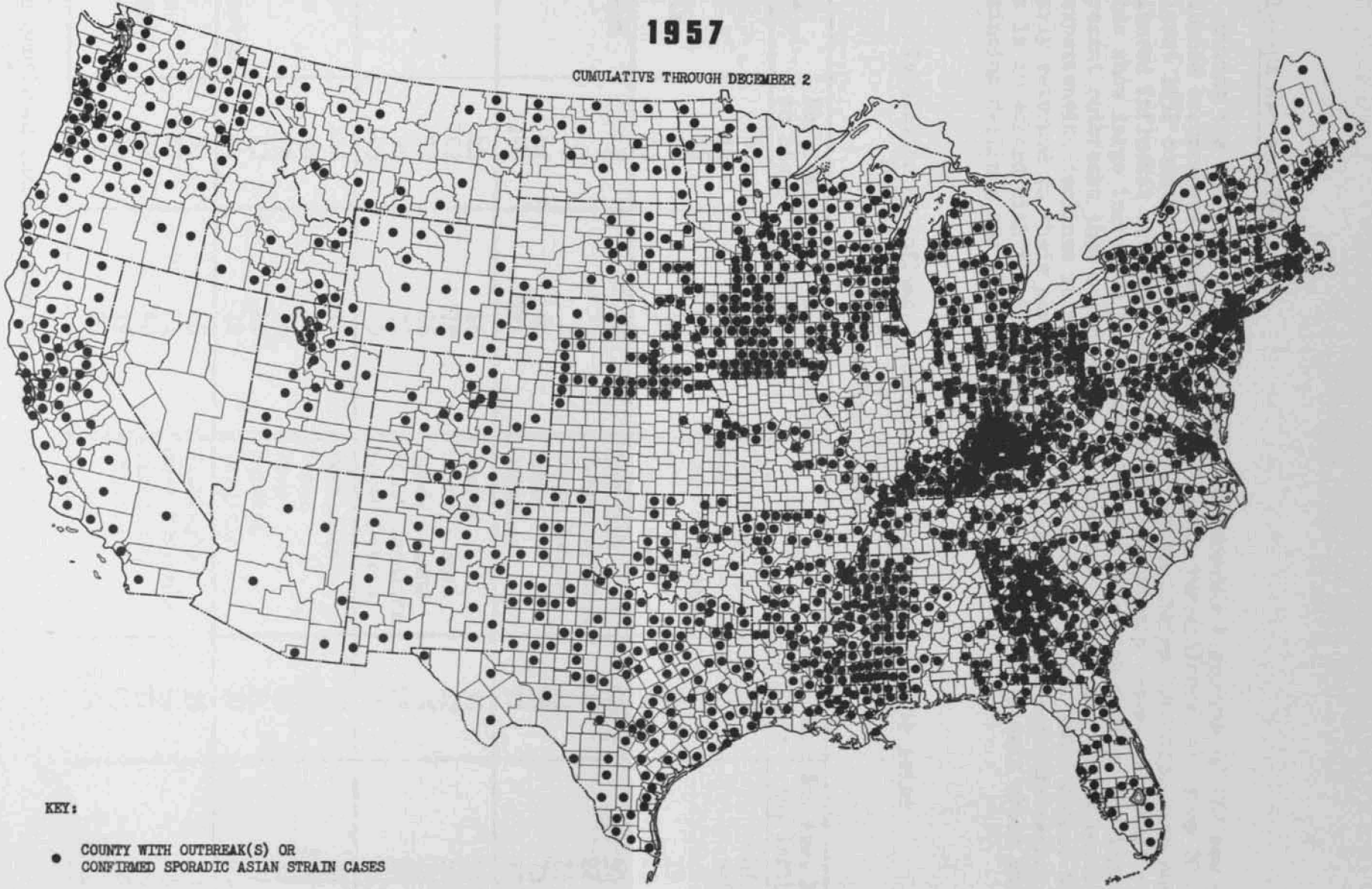
A series of graphs presented in the final section of this report compares some of the methods of measuring the influenza epidemic that have been used by the Influenza Surveillance Unit this fall. These graphs are based on preliminary data, particularly in the case of new county reports, but they are presented at this time to show that each method, in its own way, has been helpful in describing the course of the epidemic.

A summary of Asian strain influenza vaccine studies that have been carried out this fall is appended to this report.

INFLUENZA

1957

CUMULATIVE THROUGH DECEMBER 2



KEY:

● COUNTY WITH OUTBREAK(S) OR
CONFIRMED SPORADIC ASIAN STRAIN CASES

DHEW PHS-CDC

ATLANTA, GA. - APRIL, 1958

II. Influenza Map and Table

During the two-week period November 20-December 2 reports of 262 new county influenza occurrences came to the CDC Influenza Surveillance Unit from 20 states. At least 1652 counties, or 54% of the 3068 United States counties, have now experienced influenza outbreaks or confirmed Asian strain cases. Although several states show large increases in numbers of cases this week most of the increases represent outbreaks that occurred two or more weeks ago. All states appear to be experiencing declines in numbers of cases and outbreaks, and a number have clearly returned to their normal respiratory disease rates for this season. This is in accord with the influenza and pneumonia mortality data which show continuing declines for all geographic divisions.

Tabulation of Influenza Outbreaks or Confirmed Sporadic Asian Strain Cases in the Continental United States June through December 2, 1957

State	No. Cos. in State	No. Cos. Reporting Influenza	State	No. Cos. in State	No. Cos. Reporting Influenza
Alabama	67	19	Nebraska	93	49
Arizona	14	8	Nevada	17	—*
Arkansas	75	42	New Hampshire	10	2
California	58	49	New Jersey	21	19
Colorado	63	23	New Mexico	32	29
Connecticut	8	7	New York	62	50
Delaware	3	1	North Carolina	100	22
D. C.	—	1	North Dakota	53	16
Florida	67	30	Ohio	88	73
Georgia	159	122	Oklahoma	77	27
Idaho	44	16	Oregon	36	33
Illinois	102	19	Pennsylvania	67	41
Indiana	92	26	Rhode Island	5	5
Iowa	99	73	South Carolina	46	20
Kansas	105	9	South Dakota	68	25
Kentucky	120	118	Tennessee	95	35
Louisiana	64	37	Texas	254	126
Maine	16	16	Utah	29	17
Maryland	23	19	Vermont	14	7
Massachusetts	14	12	Virginia	98	43
Michigan	83	45	Washington	39	33
Minnesota	87	41	West Virginia	55	46
Mississippi	82	80	Wisconsin	71	65
Missouri	114	19	Wyoming	23	16
Montana	56	20	Totals:	3068	1652

*Sporadic confirmed cases -- counties not known

III. Current Analysis of Influenza and Pneumonia Mortality*

Table 1

Current Influenza and Pneumonia Deaths
in 108 United States Cities

Division	Number of Cities In Study	Number of Cities Reporting this week	Deaths (including estimates**) during weeks ending November 16 (107 cities)	November 23 (107 cities)	November 30 (99 cities)
All Divisions	108	99	783	694	556
New England	14	12	59	49	47
Mid. Atlantic	17	13	191	176	130
E. North Central	18	16	153	132	116
W. North Central	9	9	68	64	50
S. Atlantic	9	9	100	61	50
E. South Central	8	7	49	57	33
W. South Central	13	13	72	74	68
Mountain	8	8	10	15	13
Pacific	12	12	81	66	49

**The number of deaths given includes estimates for cities not reporting in a given week. The table is corrected for preceding weeks as late figures are received. The chart will be corrected only for gross discrepancies.

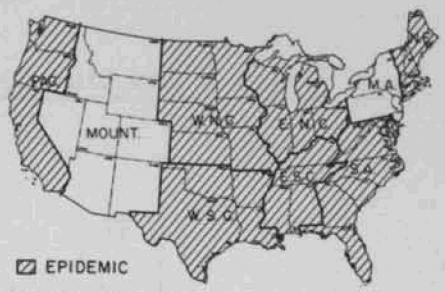
Comment

The number of deaths due to pneumonia and influenza in the nation as a whole dropped by a fifth this week as compared with the number last week. Although all Divisions showed declines only the Middle Atlantic and Mountain States were below the epidemic threshold.

The National Office of Vital Statistics notes that because of the Thanksgiving holiday, reports from the various cities may not represent complete counts.

*Prepared by the Statistics Section, CDC

WEEKLY PNEUMONIA AND INFLUENZA DEATHS



"EPIDEMIC THRESHOLD"

"NORMAL INCIDENCE"

(SEE EXPLANATION ON BACK OF SHEET)

NUMBER OF DEATHS

UNITED STATES, 108 Cities

SOUTH ATLANTIC, 9 Cities

NEW ENGLAND, 14 Cities

EAST SOUTH CENTRAL, 8 Cities

MIDDLE ATLANTIC, 17 Cities

WEST SOUTH CENTRAL, 13 Cities

EAST NORTH CENTRAL, 18 Cities

MOUNTAIN, 8 Cities

WEST NORTH CENTRAL, 9 Cities

PACIFIC, 12 Cities

WK. NO. 5 10 15 20 25 30 35 40 45 50

JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC

DHEW - PHS - BSS - CDC

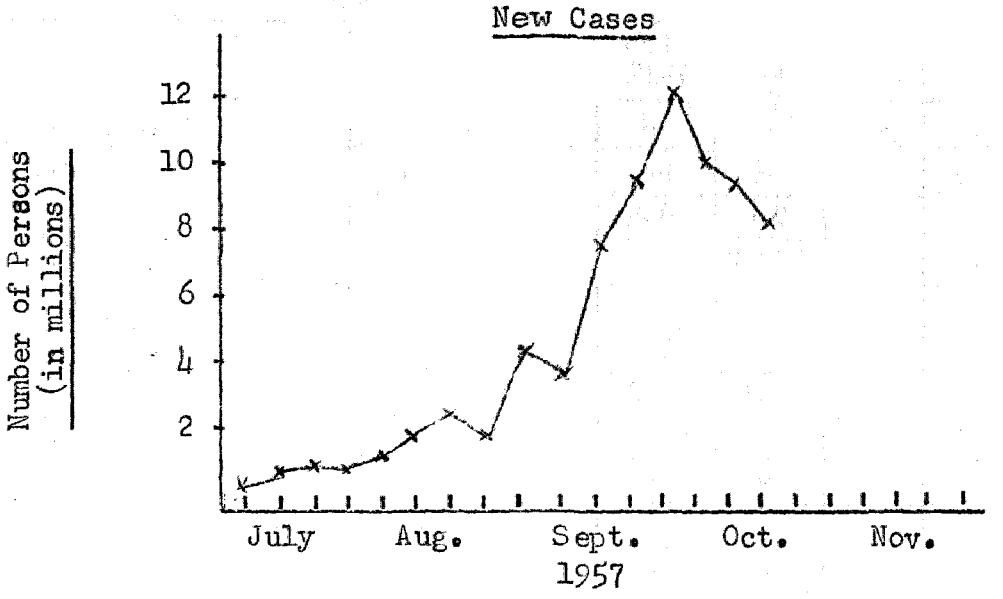
ATLANTA, GA. 58-70 SEPTEMBER, 1957

Interpretation of "Epidemic Threshold"

If two successive weeks incidence in excess of the "epidemic threshold" is defined as a "run of two", then with "normal incidence" a "run of two" will be uncommon. When incidence exceeds normal levels a "run of two" will be more likely to occur. Specifically, with normal incidence, the odds against one or more "runs of two" during a period of 52 weeks are four to one. If incidence increases above normal by two standard deviations the odds are even that a "run of two" will follow immediately.

A description of the method used in constructing the charts is given in Influenza Surveillance Report No. 16.

IV. Data from National Health Survey (Under the direction of Dr. Forrest Linder)



ACUTE UPPER RESPIRATORY DISEASES*

Estimates for continental United States

Week	New cases involving one or more days of bed disability	Average number of persons in bed each day
July 14 - 20	379,000	197,000
July 21 - 27	1,203,000	342,000
July 28 - Aug 3	1,264,000	425,000
Aug 4 - 10	955,000	339,000
Aug 11 - 17	1,181,000	447,000
Aug 18 - 24	1,758,000	675,000
Aug 25 - 31	2,159,000	654,000
Sept 1 - 7	1,819,000	651,000
Sept 8 - 14	2,279,000	856,000
Sept 15 - 21	4,487,000	1,152,000
Sept 22 - 28	3,952,000	2,094,000
Sept 29 - Oct 5	7,773,000	2,845,000
Oct 6 - 12	9,712,000	4,551,000
Oct 13 - 19	12,238,000	5,812,000
Oct 20 - 26	11,033,000	5,665,000
Oct 27 - Nov 2	9,808,000	6,372,000
Nov 3 - 9	**8,241,000	**6,003,000

*Including influenza, pneumonia, and other similar conditions.

**Provisional.

The above data are compiled from the household interview survey which is a part of the program of the U. S. National Health Survey. The household survey is conducted by trained and supervised lay interviewers. The weekly samples consist of interviews for about 700 households or 2,200 persons. Since data are collected for the two prior weeks, each week's interviewing gives information on 4,400 person-weeks of health experience. Approximate sampling errors are in the range of 15%. The estimates of sampling error do not include allowance for error of response and nonreporting.

V. Industrial Absentee Rates for 36 Cities of the United States

(Compiled from a number of sources)

City	% of Total Absent									
	Nov. 1956	9-29 1957	October 1957 1-5	7-11	13-19	20-26	10/27-11/2	November 1957 3-9	10-16	17-23
Boston	6.8	-	-	-	9.2	9.7	10.3	10.4	8.6	8.5
Manhattan	3.3	-	-	UP	7.9	6.5	5.3	4.3	3.9	4.0
Buffalo	6.5	-	9.4	8.4	8.2	7.4	6.8	-	-	7.2
Syracuse	5.6		UP/NR	-	8.6	7.7	7.0	5.8	5.8	-
Philadelphia	5.3	-	-	9.0	11.6	10.3	8.5	7.1	6.0	6.3
Pittsburgh	3.7	-	-	9.5	13.0	12.4	7.7	6.4	4.8	5.1
Washington	5.4	-	7.1	7.2	8.7	9.6	9.2	8.3	5.6	5.5
Baltimore	6.2	-	-	UP/NR	9.6	9.9	10.5	10.4	7.5	7.8
Richmond	4.8	-	-	-	-	8.9	13.8	9.0	6.3	6.4
Atlanta	5.5		UP/NR	UP	7.3	7.2	8.2	8.7	7.2	7.0
Miami	7.3	-	-	-	-	-	-	-	8.5	-
Memphis	4.5	-	-	-	-	*	6.5	6.2	4.7	4.6
Birmingham	4.7	-	-	UP	6.6	*	7.5	6.6	6.2	5.7
Nashville	3.4	-	-	UP/NR	6.8	*	9.5	10.7	6.5	5.9
Jacksonville	6.2	-	-	-	-	8.5	9.1	10.0	9.1	8.8
New Orleans	5.3	-	-	-	-	9.2	8.7	7.7	6.9	7.0
Cleveland	4.0		-	5.0	5.3	4.8	5.2	5.4	4.3	4.2
Columbus	5.9		-	-	5.8	7.2	7.5	6.2	-	-
Cincinnati	4.5	-	-	-	7.3	7.6	6.9	6.3	5.5	6.3
Detroit	5.8	-	9.8	11.4	9.1	*	7.6	7.1	7.5	6.6
Indianapolis	5.1	-	-	-	7.9	*	10.7	10.3	-	5.5
Milwaukee	7.3	-	-	8.0	10.2	9.5	7.6	7.3	7.9	-
Chicago	5.7	-	7.8	8.2	8.2	7.6	6.9	6.1	6.0	-
Minneapolis	4.7	-	-	-	6.6	7.3	7.7	6.8	5.6	5.8
Omaha	5.2	-	-	-	7.5	7.6	8.7	8.2	5.6	5.3
St. Louis	4.2	-	-	-	4.9	6.5	7.8	8.1	5.7	5.8
Kansas City	4.3	-	-	-	6.3	8.3	9.2	7.0	7.1	6.5
Houston	4.1	-	-	UP/NR	7.1	5.6	4.8	4.7	-	-
Dallas	3.8	-	-	-	5.6	7.3	10.3	9.7	7.5	7.1
Oklahoma City	3.3	-	-	-	3.8	4.5	5.8	6.1	5.3	5.2
Denver	8.1	-	10.2	11.8	9.6	9.5	-	-	-	-
Phoenix	7.8	-	10.8	9.5	8.1	-	8.8	-	-	-
Salt Lake City	4.9	-	9.8	10.5	9.4	8.3	6.4	6.2	5.7	6.5
San Francisco	8.6	-	-	-	-	10.1	10.0	10.5	8.8	8.8
Seattle	5.4	-	-	-	6.1	7.1	6.5	8.3	6.8	6.2
Los Angeles	5.6	-	-	-	6.2	7.5	-	-	-	-

- = normal absentee rate
UP = increased absenteeism
NR = no rate available

*Data not available

V. Industrial Absentee Data

By November 23, nine of the 36 cities reporting on industrial absenteeism had returned to normal absentee rates. All of the cities show rates lower than recent peaks, and there is every indication that they will soon be back to seasonal normals. It has been observed that absentee rates within a given city may vary widely from industry to industry. However, the dates of peak absenteeism agree quite well with each other and with mortality and National Survey figures.

VI. Influenza Vaccine Production and Distribution

Influenza Vaccine Released

(Totals through November 27, 1957)

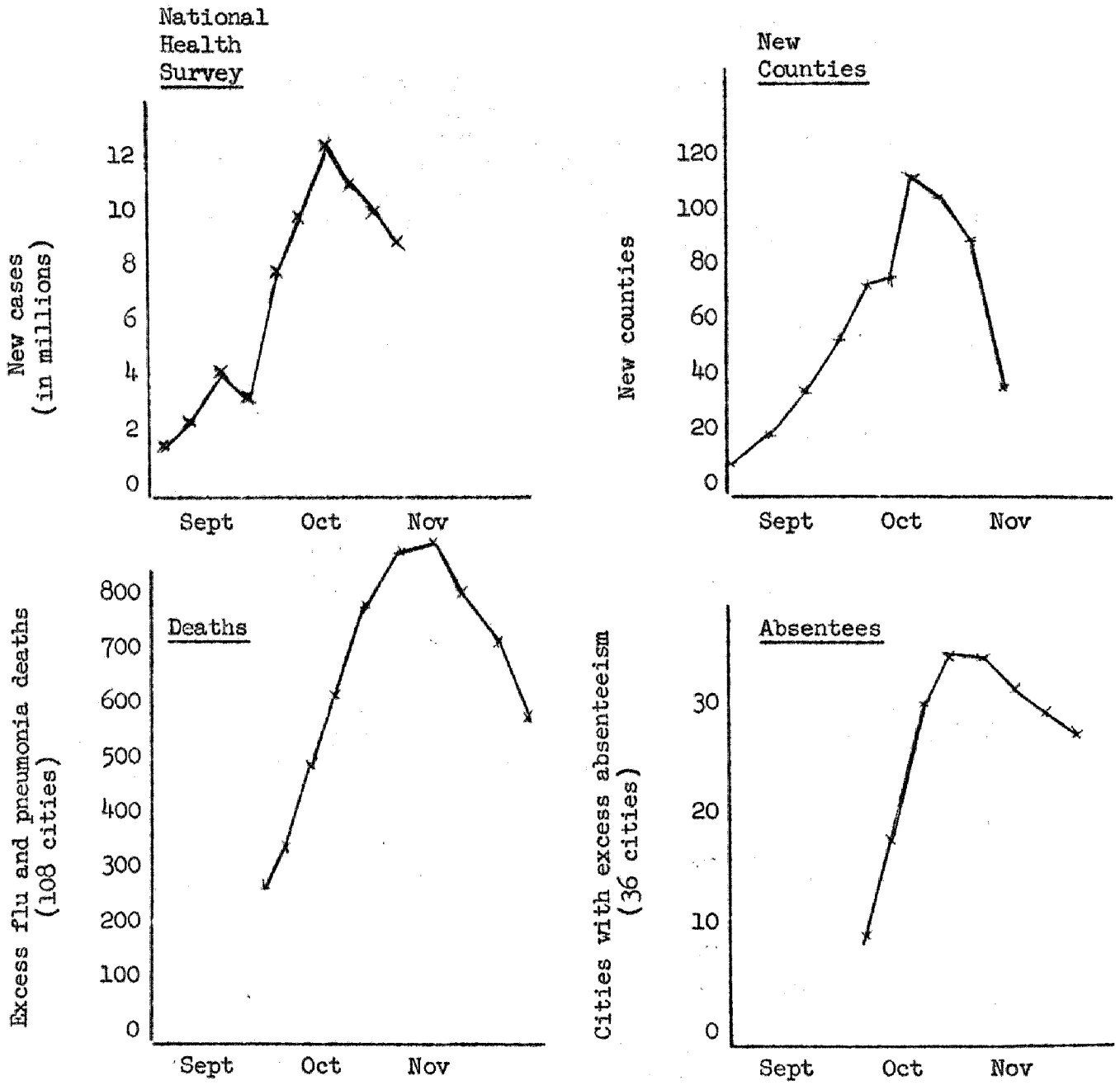
Pharmaceutical Concern	400 cca Monovalent Asian strain	200 cca Monovalent Asian strain	Polyvalent with Asian strain
Lederle	831,620 ml	8,264,220 ml	537,960 ml
Lilly	949,790	2,146,717	597,305
Merck Sharpe & Dohme	3,625,610	13,884,520	---
National Drug	804,545	7,615,275	2,054,435
Parke, Davis	---	779,335	---
Pitman-Moore	3,070,840	5,015,042	1,476,375

Total released to date: 51,653,589 ml
Amount released since November 20: 2,775,965 ml

Estimated Vaccine Production:

November	17,331,000 ml
December	8,175,000 ml

VII. Epidemic Trends (preliminary data)



Comment on Epidemic Trend Graphs:

The above graphs are based on incomplete and preliminary data. They are produced at this time to show the general agreement of the various methods of measuring the present influenza epidemic. The peaks of new cases (National Health Survey) and of new county outbreaks both occurred during the week ending October 19. Excess pneumonia and influenza mortality peaked during the week ending November 9. The three week delay in mortality peak is probably related to late involvement of old-age and high-risk groups during an epidemic. It has been observed in previous epidemics. Industrial absenteeism as pictured on the graph is delayed about one week, but these figures represent unrefined data.

Appendix A: CDC Influenza Surveillance Report No. 28

Asian Influenza Vaccine Studies as of November 20, 1957
Route and Frequency of Dosage in 56 Studies

Prepared by Dr. Roger M. Cole, Executive Secretary
Public Health Service Influenza Research Committee

As of November 20, 1957, replies to the questionnaire on field studies of Asian influenza virus vaccine had been received from 75 sources in 40 states and 6 U. S. territories and possessions. No replies have been received from 8 states. No studies have been made, nor contemplated, by 42 groups in 22 states and 6 possessions and territories. Fifty-six studies are being made by 33 investigating groups in 18 states.

In the 56 studies reported, approximately 100,000 persons are included in the aggregate as subjects. Most are adults, followed by young adults (college and medical students, etc.) and children. A few small groups such as pregnant women, aged adults and patients with chronic pulmonary disease are included.

Subcutaneous and intradermal routes of immunization are nearly equally frequent. Many studies, however, use combinations of various routes, dosages and number of doses. A dose of less than 50 CCAU (usually 20 CCAU) is used somewhat more often than the next most frequent dose of 200 CCAU. The former, as might be expected, is most often used intradermally, whereas the latter, except for rare intramuscular administration, is used subcutaneously.

Most studies are being conducted by, or in collaboration with, medical schools and university hospitals (20 studies). Next most frequent is the Public Health Service (13 studies), followed by 9 State Health Departments. A few studies of large numbers of persons are under way in installations of the Armed Forces and in industrial populations.

A number of studies are either small or inadequately planned, or both; most do not appear, from the information supplied, to incorporate controls. Some study of reactions to the vaccine appears to be contemplated in most investigations, but the nature of the information to be derived is not clear.

As of Wednesday, November 20, 1957, reports had been received from 75 sources; 42 stated no studies in progress nor porposed; 33 reported 56 studies.

Route of immunization	No. studies using this route*	Number of doses used by this route*			
		One	Two	One + other route	Not stated
Intradermal	33	14	20	3	1
Subcutaneous	37	28	11	4	1
Intramuscular	9	5	3	0	1
Not stated	1	0	0	0	1

*Some studies using several routes and dosage schedules each.

Dosage Level and Route in 56 Studies

Dosage (CCAU)	No. studies using this dose**	Route used at these dosages:** Intradermal	Subcutaneous	Intramuscular
Under 60	35	33	10	2
100	13	3	12	2
150	1	0	0	1
200	27	0	23	5
250-275	2	0	1	1
400	6	0	6	0
500	2	0	1	0
Not stated	5	3	3	0
		39	56	11

**Totals vary because some studies use several different routes with one dose, or vice versa.

Types of Populations Being Immunized

Population	No. studies	No. persons
Adults	22	51,353
Young adults	13	31,533
Children	11	2,987
General population (all ages)	4	7,950
Pregnant women	3	51
Aged adults	2	320
Patients with chronic bronchiectasis	1	50
	56	94,244

Types of Controls Being Used in 56 Studies

No controls mentioned	40
Unvaccinated	10
Placebo	3
Other (polyvalent vaccine)	3

Some studies incorporate two types of controls

Study of Reactions in 56 Studies

Yes, no further information	28
Yes, definite part of study	8
Yes, but only as feasible	5
Not mentioned	14
No	1